CONFERENCE ON DISARMAMENT

CD/1118
22 January 1992

Original: ENGLISH

ARGENTINA AND BRAZIL

AGREEMENT BETWEEN THE REPUBLIC OF ARGENTINA, THE FEDERATIVE REPUBLIC OF BRAZIL, THE BRAZILIAN-ARGENTINE AGENCY FOR ACCOUNTING AND CONTROL OF NUCLEAR MATERIALS AND THE INTERNATIONAL ATOMIC ENERGY AGENCY FOR THE APPLICATION OF SAFEGUARDS

WHEREAS the Republic of Argentina and the Federative Republic of Brazil (hereinafter referred to as "the States Parties") are parties to the Agreement on the Exclusively Peaceful Utilization of Nuclear Energy (hereinafter referred to as "the SCCC Agreement"), which established the Common System of Accounting and Control of Nuclear Materials (hereinafter referred to as "the SCCC");

RECALLING the undertakings of the States Parties in the SCCC Agreement;

RECALLING that, pursuant to the SCCC Agreement, none of its provisions shall be interpreted as affecting the inalienable right of the parties thereto to carry out research on, produce and use nuclear energy for peaceful purposes without discrimination and in conformity with Articles I to IV of the SCCC Agreement;

WHEREAS the States Parties are members of the Brazilian-Argentine Agency for Accounting and Control of Nuclear Materials (hereinafter referred to as "ABACC"), to which the implementation of the SCCC has been entrusted;

WHEREAS the States Parties have decided to conclude with the International Atomic Energy Agency (hereinafter referred to as "the Agency") a joint safeguards agreement, with the SCCC as a basis for the agreement;

WHEREAS the States Parties have further voluntarily requested the Agency to apply its safeguards taking into account the SCCC;

WHEREAS it is the desire of the States Parties, ABACC and the Agency to avoid unnecessary duplication of activities;

WHEREAS the Agency is authorized, pursuant to Article III.A.5 of its Statute (hereinafter referred to as "the Statute"), to conclude safeguards agreements at the request of Member States;

NOW THEREFORE the States Parties, ABACC and the Agency have agreed as follows:

P A R T I

BASIC UNDERTAKINGS

A r t i c l e 1

The States Parties undertake to accept safeguards, in accordance with the terms of this Agreement, on all nuclear material in all nuclear activities within their territories, under their jurisdiction or carried out under their control anywhere, for the exclusive purpose of verifying that such material is not diverted to nuclear weapons or other nuclear explosive devices.

A r t i c l e 2

(a) The Agency shall have the right and the obligation to ensure that safeguards will be applied, in accordance with the terms of this Agreement, on all nuclear material in all nuclear activities within the territories of the States Parties, under their jurisdiction or carried out under their control anywhere, for the exclusive purpose of verifying that such material is not diverted to nuclear weapons or other nuclear explosive devices.

(b) ABACC undertakes, in applying its safeguards on nuclear material in all nuclear activities within the territories of the States Parties, to co-operate with the Agency, in accordance with the terms of this Agreement, with a view to ascertaining that such nuclear material is not diverted to nuclear weapons or other nuclear explosive devices.

(c) The Agency shall apply its safeguards in such a manner as to enable it to verify, in ascertaining that there has been no diversion of nuclear material to nuclear weapons or other nuclear explosive devices, findings of the SCCC. The Agency's verification shall include, inter alia, independent measurements and observations conducted by the Agency, in accordance with the procedures specified in this Agreement. The Agency, in its verification, shall take due account of the technical effectiveness of the SCCC.

A r t i c l e 3

(a) The States Parties, ABACC and the Agency shall co-operate to facilitate the implementation of the safeguards provided for in this Agreement.

(b) ABACC and the Agency shall avoid unnecessary duplication of safeguards activities.

IMPLEMENTATION OF SAFEGUARDS

Article 4

The safeguards provided for in this Agreement shall be implemented in a manner designed:

(a) to avoid hampering the economic and technological development of the States Parties or international co-operation in the field of nuclear activities, including international exchange of nuclear material;

(b) to avoid undue interference in the States Parties' nuclear activities, and in particular in the operation of facilities;

(c) to be consistent with prudent management practices required for the economic and safe conduct of nuclear activities; and

(d) to enable the Agency to fulfill its obligations under this Agreement taking into account the requirement for the Agency to preserve technological secrets.

Article 5

(a) The Agency shall take every precaution to protect any confidential information coming to its knowledge in the implementation of this Agreement.

(b) (i) The Agency shall not publish or communicate to any State, organization or person any information obtained by it in connection with the implementation of this Agreement, except that specific information relating to the implementation thereof may be given to the Board of Governors of the Agency (hereinafter referred to as "the Board") and to such Agency staff members as require such knowledge by reason of their official duties in connection with safeguards, but only to the extent necessary for the Agency to fulfill its responsibilities in implementing this Agreement.

(ii) Summarized information on nuclear material subject to safeguards under this Agreement may be published upon decision of the Board if the States Parties directly concerned agree thereto.

Article 6

(a) In implementing safeguards pursuant to this Agreement, full account shall be taken of technological developments in the field of safeguards, and every effort shall be made to ensure optimum cost-effectiveness and the application of the principle of safeguarding effectively the flow of nuclear material subject to safeguards under this Agreement by use of instruments and other techniques at certain strategic points to the extent that present or future technology permits.

(b) In order to ensure optimum cost-effectiveness, use shall be made, for example, of such means as:

(i) containment and surveillance as a means of defining material balance areas for accounting and control purposes;

(ii) statistical techniques and random sampling in evaluating the flow of nuclear material; and

(iii) concentration of verification procedures on those stages in the nuclear fuel cycle involving the production, processing, use or storage of nuclear material from which nuclear weapons or other nuclear explosive devices could readily be made, and minimization of verification procedures in respect of other nuclear material, on condition that this does not hamper the implementation of this Agreement.

PROVISION OF INFORMATION TO THE AGENCY

Article 7

(a) In order to ensure the effective implementation of safeguards under this Agreement, ABACC shall, in accordance with the provisions set out in this Agreement, provide the Agency with information concerning nuclear material subject to safeguards under this Agreement and the features of facilities relevant to safeguarding such material.

(b) (i) The Agency shall require only the minimum amount of information and data consistent with carrying out its responsibilities under this Agreement.

(ii) Information pertaining to facilities shall be the minimum necessary for safeguarding nuclear material subject to safeguards under this Agreement.

(c) If a State Party so requests, the Agency shall be prepared to examine directly on the premises either of that State Party or of ABACC, design information which the State Party regards as being of particular sensitivity. Such information need not be physically transmitted to the Agency provided that it remains readily available for further examination by the Agency on the premises either of that State Party or of ABACC.

AGENCY INSPECTORS

Article 8

(a) (i) The Agency shall secure the consent of the States Parties through ABACC to the designation of Agency inspectors to the States Parties.

(ii) If the States Parties through ABACC, either upon proposal of a designation or at any other time after a designation has been made, object to the designation, the Agency shall propose an alternative designation or designations.

(iii) If, as a result of the repeated refusal of the States Parties through ABACC to accept the designation of Agency inspectors, inspections to be conducted under this Agreement would be impeded, such refusal shall be considered by the Board, upon referral by the Director General of the Agency (hereinafter referred to as "the Director General"), with a view to its taking appropriate action.

(b) ABACC and the States Parties shall take the necessary steps to ensure that Agency inspectors can effectively discharge their functions under this Agreement.

(c) The visits and activities of Agency inspectors shall be so arranged as:

(i) to reduce to a minimum the possible inconvenience and disturbance to the States Parties and ABACC and to the nuclear activities inspected;

(ii) to ensure protection of any confidential information coming to the knowledge of Agency inspectors; and

(iii) to take into account ABACC activities to avoid unnecessary duplication of efforts.

STARTING POINT OF SAFEGUARDS

Article 9

(a) When any material containing uranium or thorium which has not reached the stage of the nuclear fuel cycle described in paragraph (b) is imported into a State Party to this Agreement, that State Party shall inform the Agency of its quantity and composition, unless the material is imported for specifically non-nuclear purposes; and

(b) When any nuclear material of a composition and purity suitable for fuel fabrication or for isotopic enrichment leaves the plant or the process stage in which it has been produced, or when such nuclear material, or any other nuclear material produced at a later stage in the nuclear fuel cycle, is imported into a State Party to this Agreement, the nuclear material shall become subject to the other safeguards procedures specified in this Agreement.

TERMINATION OF SAFEGUARDS

Article 10

(a) Safeguards under this Agreement shall terminate on nuclear material upon determination by ABACC and the Agency that the material has been consumed, or has been diluted in such a way that it is no longer usable for any nuclear activity relevant from the point of view of safeguards, or has become practicably irrecoverable.

(b) Where nuclear material subject to safeguards under this Agreement is to be used in non-nuclear activities, such as the production of alloys or ceramics, ABACC shall agree with the Agency, before the material is so used, on the circumstances under which the safeguards under this Agreement on such material may be terminated.

EXEMPTION FROM SAFEGUARDS

Article 11

(a) Nuclear material shall be exempted from safeguards in accordance with the provisions specified in Article 35 of this Agreement.

(b) Where nuclear material subject to safeguards under this Agreement is to be used in non-nuclear activities which, in the opinion of either ABACC or the Agency, will not render the material practicably irrecoverable, ABACC shall agree with the Agency, before the material is so used, on the circumstances under which such material may be exempted from safeguards.

TRANSFER OF NUCLEAR MATERIAL OUT OF THE STATES PARTIES

Article 12

(a) ABACC shall give the Agency notification of transfers of nuclear material subject to safeguards under this Agreement out of the States Parties, in accordance with the provisions set out in this Agreement. Safeguards on nuclear material in the States Parties under this Agreement shall terminate when the recipient State has assumed responsibility therefor, as provided for in Part II of this Agreement. The Agency shall maintain records indicating each transfer and the re-application of safeguards to the transferred nuclear material.

(b) When any material containing uranium or thorium which has not reached the stage of the nuclear fuel cycle described in Article 9(b) is directly or indirectly exported by a State Party to this Agreement to any State not Party to this Agreement, the State Party shall inform the Agency of its quantity, composition and destination, unless the material is exported for specifically non-nuclear purposes.

SPECIAL PROCEDURES

Article 13

If a State Party intends to exercise its discretion to use nuclear material which is required to be safeguarded under this Agreement for nuclear propulsion or operation of any vehicle, including submarines and prototypes, or in such other non-proscribed nuclear activity as agreed between the State Party and the Agency, the following procedures shall apply:

(a) that State Party shall inform the Agency, through ABACC, of the activity, and shall make it clear:

(i) that the use of the nuclear material in such an activity will not be in conflict with any undertaking of the State Party under agreements concluded with the Agency in connection with Article XI of the Statute of the Agency or any other agreement concluded with the Agency in connection with INFCIRC/26 (and Add.1) or INFCIRC/66 (and Rev.1 or 2), as applicable; and

(ii) that during the period of application of the special procedures the nuclear material will not be used for the production of nuclear weapons or other nuclear explosive devices;

(b) the State Party and the Agency shall make an arrangement so that, these special procedures shall apply only while the nuclear material is used for nuclear propulsion or in the operation of any vehicle, including submarines and prototypes, or in such other non-proscribed nuclear activity as agreed between the State Party and the Agency. The arrangement shall identify, to the extent possible, the period or circumstances during which the special procedures shall be applied. In any event, the other procedures provided for in this Agreement shall apply again as soon as the nuclear material is reintroduced into a nuclear activity other than the above. The Agency shall be kept informed of the total quantity and composition of such material in that State Party and of any export of such material; and

(c) each arrangement shall be concluded between the State Party concerned and the Agency as promptly as possible and shall relate only to such matters as temporal and procedural provisions and reporting arrangements, but shall not involve any approval or classified knowledge of such activity or relate to the use of the nuclear material therein.

MEASURES IN RELATION TO VERIFICATION OF NON-DIVERSION

Article 14

If the Board, upon report of the Director General, decides that an action by ABACC and/or a State Party is essential and urgent in order to ensure verification that nuclear material subject to safeguards under this Agreement is not diverted to nuclear weapons or other nuclear explosive devices, the Board may call upon ABACC and/or the State Party concerned to take the required action without delay, irrespective of whether procedures have been invoked pursuant to Article 22 of this Agreement for the settlement of a dispute.

Article 15

If the Board, upon examination of relevant information reported to it by the Director General, finds that the Agency is not able to verify that there has been no diversion of nuclear material required to be subject to safeguards under this Agreement to nuclear weapons or other nuclear explosive devices, it may make the reports provided for in paragraph C of Article XII of the Statute and may also take, where applicable, the other measures provided for in that paragraph. In taking such action, the Board shall take account of the degree of assurance provided by the safeguards measures that have been applied and shall afford the State Party concerned every reasonable opportunity to furnish the Board with any necessary reassurance.

PRIVILEGES AND IMMUNITIES

Article 16

Each State Party shall apply to the Agency, including its property, funds and assets, and to its inspectors and other officials performing functions under this Agreement, the relevant provisions of the Agreement on the Privileges and Immunities of the International Atomic Energy Agency.

FINANCE

Article 17

The States Parties, ABACC and the Agency will bear the expenses incurred by them in implementing their respective responsibilities under this Agreement. However, if the States Parties, or persons under their jurisdiction, or ABACC, incurs extraordinary expenses as a result of a specific request by the Agency, the Agency shall reimburse such expenses provided that it has agreed in advance to do so. In any case, the Agency shall bear the cost of any additional measuring or sampling which Agency inspectors may request.

THIRD PARTY LIABILITY FOR NUCLEAR DAMAGE

Article 18

Each State Party shall ensure that any protection against third party liability in respect of nuclear damage, including any insurance or other financial security, which may be available under its laws or regulations shall apply to the Agency and its officials for the purpose of the implementation of this Agreement, in the same way as that protection applies to residents of that State Party.

INTERNATIONAL RESPONSIBILITY

Article 19

Any claim by ABACC or a State Party against the Agency or by the Agency against ABACC or a State Party in respect of any damage resulting from the implementation of safeguards under this Agreement, other than damage arising out of a nuclear incident, shall be settled in accordance with international law.

INTERPRETATION AND APPLICATION OF THE AGREEMENT AND SETTLEMENT OF DISPUTES

Article 20

At the request of the Agency, ABACC or a State Party or States Parties, there shall be consultations about any question arising out of the interpretation or application of this Agreement.

Article 21

ABACC and the States Parties shall have the right to request that any question arising out of the interpretation or application of this Agreement be considered by the Board. The Board shall invite all Parties to the Agreement to participate in the discussion of any such question by the Board.

Article 22

Any dispute arising out of the interpretation or application of this Agreement, except a dispute with regard to a finding by the Board under Article 15 or an action taken by the Board pursuant to such a finding, which is not settled by negotiation or another procedure agreed to by the State Party or States Parties concerned, ABACC and the Agency shall, at the request of any of them, be submitted to an arbitral tribunal composed of five arbitrators. The States Parties and ABACC shall designate two arbitrators and the Agency shall also designate two arbitrators, and the four arbitrators so designated shall elect a fifth, who shall be the Chairman. If, within thirty days of the request for arbitration, either the Agency or the States Parties and ABACC have not designated two arbitrators each, either the Agency or the States Parties and ABACC may request the President of the International Court of Justice to appoint these arbitrators. The same procedure shall apply if, within thirty days of the designation or appointment of the fourth arbitrator, the fifth arbitrator has not been elected. A majority of the members of the arbitral tribunal shall constitute a quorum, and all decisions shall require the concurrence of at least three arbitrators. The arbitral procedure shall be fixed by the tribunal. The decisions of the tribunal shall be binding on the States Parties, ABACC and the Agency.

SUSPENSION OF APPLICATION OF AGENCY SAFEGUARDS UNDER OTHER AGREEMENTS

Article 23

Upon the coming into force of this Agreement for a State Party, the application of Agency safeguards in that State Party under other safeguards agreements with the Agency not involving third parties will be suspended while this Agreement is in force. The Agency and the State Party concerned shall initiate consultations with the third party concerned with a view to suspending the application of safeguards in that State Party under safeguards agreements involving third parties. The State Party's undertaking in the agreements referred to above not to use items which are subject thereto in such a way as to further any military purpose shall continue to apply.

AMENDMENT OF THE AGREEMENT

Article 24

(a) ABACC, the States Parties and the Agency shall, at the request of any one of them, consult on amendment to this Agreement.

(b) All amendments shall require the agreement of ABACC, the States Parties and the Agency.

(c) Amendments to this Agreement shall enter into force in the same conditions as the entry into force of the Agreement itself.

(d) The Director General shall promptly inform all Member States of the Agency of any amendment to this Agreement.

ENTRY INTO FORCE AND DURATION

Article 25

This Agreement shall enter into force on the date upon which the Agency receives from ABACC and from the States Parties written notification that their respective requirements for entry into force have been met. The Director General shall promptly inform all Member States of the Agency of the entry into force of this Agreement.

Article 26

This Agreement shall remain in force as long as the States Parties are Parties to the SCCC Agreement.

PROTOCOL

Article 27

The Protocol attached to this Agreement shall be an integral part thereof. The term "Agreement" as used in this instrument means the Agreement and the Protocol together.

PART II

INTRODUCTION

Article 28

The purpose of this part of the Agreement is to specify the procedures to be applied in the implementation of the safeguards provisions of Part I.

OBJECTIVE OF SAFEGUARDS

Article 29

The objective of the safeguards procedures set forth in this Agreement is the timely detection of diversion of significant quantities of nuclear material from peaceful nuclear activities to the manufacture of nuclear weapons or of other nuclear explosive devices or for purposes unknown, and deterrence of such diversion by the risk of early detection.

Article 30

For the purpose of achieving the objective set forth in Article 29, nuclear material accountancy shall be used as a safeguards measure of fundamental importance, with containment and surveillance as important complementary measures.

Article 31

The technical conclusion of the Agency's verification activities shall be a statement, in respect of each material balance area, of the amount of material unaccounted for over a specific period, and giving the limits of accuracy of the amounts stated.

COMMON SYSTEM OF ACCOUNTING FOR AND CONTROL OF NUCLEAR MATERIAL

Article 32

Pursuant to Article 2, the Agency, in carrying out its verification activities, shall make full use of the SCCC and shall avoid unnecessary duplication of ABACC's accounting and control activities.

Article 33

ABACC's system of accounting for and control of nuclear material under this Agreement shall be based on a structure of material balance areas, and shall make provision, as appropriate and specified in the Subsidiary Arrangements, for the establishment of such measures as:

(a) a measurement system for the determination of the quantities of nuclear material received, produced, shipped, lost or otherwise removed from inventory, and the quantities on inventory;

(b) the evaluation of precision and accuracy of measurements and the estimation of measurement uncertainty;

(c) procedures for identifying, reviewing and evaluating differences in shipper/receiver measurements;

(d) procedures for taking a physical inventory;

(e) procedures for the evaluation of accumulations of unmeasured inventory and unmeasured losses;

(f) a system of records and reports showing, for each material balance area, the inventory of nuclear material and the changes in that inventory including receipts into and transfers out of the material balance area;

(g) provisions to ensure that the accounting procedures and arrangements are being operated correctly; and

(h) procedures for the provision of reports to the Agency in accordance with Articles 57 to 63 and 65 to 67.

TERMINATION OF SAFEGUARDS

A r t i c l e 34

(a) Safeguards under this Agreement shall terminate on nuclear material under the conditions set forth in Article 10(a). Where the conditions of Article 10(a) are not met, but ABACC considers that the recovery of safeguarded nuclear material from residues is not for the time being practicable or desirable, ABACC and the Agency shall consult on the appropriate safeguards measures to be applied.

(b) Safeguards under this Agreement shall terminate on nuclear material under the conditions set forth in Article 10(b) provided that ABACC and the Agency agree that such nuclear material is practicably irrecoverable.

(c) Safeguards under this Agreement shall terminate on nuclear material transferred out of the States Parties, under the conditions set forth in Article 12(a) and the procedures specified in Articles 89 to 92.

EXEMPTIONS FROM SAFEGUARDS

A r t i c l e 35

At the request of ABACC, the Agency shall exempt nuclear material from safeguards as follows:

(a) special fissionable material, when it is used in gram quantities or less as a sensing component in instruments;

(b) nuclear material, when it is used in non-nuclear activities in accordance with Article 11(b);

(c) if the total quantity of nuclear material which has been exempted in each State Party in accordance with this sub-Article does not at any time exceed:

(i) one kilogram in total of special fissionable material, which may consist of one or more of the following:

(1) plutonium;

(2) uranium with an enrichment of 0.2 (20%) and above, taken account of by multiplying its weight by its enrichment; and

(3) uranium with an enrichment below 0.2 (20%) and above that of natural uranium, taken account of by multiplying its weight by five times the square of its enrichment;

(ii) ten metric tons in total of natural uranium and depleted uranium with an enrichment above 0.005 (0.5%);

(iii) twenty metric tons of depleted uranium with an enrichment of 0.005 (0.5%) or below; and

(iv) twenty metric tons of thorium; or

(d) plutonium with an isotopic concentration of plutonium-238 exceeding 80%.

Article 36

If exempted nuclear material is to be processed or stored together with nuclear material subject to safeguards under this Agreement, provision shall be made for the re-application of safeguards thereto.

SUBSIDIARY ARRANGEMENTS

Article 37

Taking into account the SCCC, ABACC, the State Party concerned and the Agency shall make Subsidiary Arrangements which shall specify in detail, to the extent necessary to permit the Agency to fulfill its responsibilities under this Agreement in an effective and efficient manner, how the procedures laid down in this Agreement are to be applied. By agreement between ABACC, the State Party concerned and the Agency, the Subsidiary Arrangements may, without amendment of this Agreement, be extended or changed or, in respect of a particular facility, terminated.

Article 38

The Subsidiary Arrangements shall enter into force at the same time as, or as soon as possible after, the entry into force of this Agreement. ABACC, the States Parties and the Agency shall make every effort to achieve their entry into force within one hundred and eighty days of the entry into force of this Agreement; an extension of that period shall require agreement between ABACC, the States Parties and the Agency. The State Party concerned through ABACC shall provide the Agency promptly with the information required for completing the Subsidiary Arrangements. Upon the entry into force of this Agreement, the Agency shall have the right to apply the procedures laid down therein in respect of the nuclear material listed in the inventory provided for in Article 39 even if the Subsidiary Arrangements have not yet entered into force.

INVENTORY

Article 39

On the basis of the initial report referred to in Article 60, the Agency shall establish unified inventories of all nuclear material in each State Party subject to safeguards under this Agreement, irrespective of its origin, and shall maintain these inventories on the basis of subsequent reports and of the results of its verification activities. Copies of the inventories shall be made available to ABACC at intervals to be agreed.

DESIGN INFORMATION

General provisions

Article 40

Pursuant to Article 7, design information in respect of existing facilities shall be provided to the Agency by the State Party concerned through ABACC during the discussion of the Subsidiary Arrangements. The time limits for the provision of design information in respect of the new facilities shall be specified in the Subsidiary Arrangements and such information shall be provided as early as possible before nuclear material is introduced into a new facility.

Article 41

The design information to be provided to the Agency shall include, in respect of each facility, when applicable:

(a) the identification of the facility, stating its general character, purpose, nominal capacity and geographic location, and the name and address to be used for routine business purposes;

(b) a description of the general arrangement of the facility with reference, to the extent feasible, to the form, location and flow of nuclear material and to the general layout of important items of equipment which use, produce or process nuclear material;

(c) a description of features of the facility relating to material accountancy, containment and surveillance; and

(d) a description of the existing and proposed procedures at the facility for nuclear material accountancy and control, with special reference to material balance areas established by the operator, measurements of flow and procedures for physical inventory taking.

Article 42

Other information relevant to the application of safeguards under this Agreement shall also be provided to the Agency in respect of each facility if so specified in the Subsidiary Arrangements. ABACC shall provide the Agency with supplementary information on the health and safety procedures which the Agency shall observe and with which the Agency inspectors shall comply at the facility.

Article 43

The Agency shall be provided by the State Party concerned through ABACC with design information in respect of a modification relevant for safeguards purposes under this Agreement, for examination, and shall be informed of any change in the information provided to it under Article 42, sufficiently in advance for the safeguards procedures to be adjusted when necessary.

A r t i c l e 44

Purposes of examination of design information

The design information provided to the Agency shall be used for the following purposes:

(a) to identify the features of facilities and nuclear material relevant to the application of safeguards to nuclear material in sufficient detail to facilitate verification;

(b) to determine material balance areas to be used for accounting purposes and to select those strategic points which are key measurement points and which will be used to determine flow and inventory of nuclear material; in determining such material balance areas the following criteria, inter alia, shall be used:

(i) the size of the material balance area shall be related to the accuracy with which the material balance can be established;

(ii) in determining the material balance area advantage shall be taken of any opportunity to use containment and surveillance to help ensure the completeness of flow measurements and thereby to simplify the application of safeguards and to concentrate measurement efforts at key measurement points;

(iii) a special material balance area may be established at the request of the State Party concerned through ABACC around a process step involving technologically, industrially or commercially sensitive information; and

(iv) for installations of particular sensitivity, key measurement points may be selected in such a way as to enable the Agency to fulfill its obligations under this Agreement taking into account the requirement for the Agency to preserve technological secrets;

(c) to establish the nominal timing and procedures for taking of physical inventory of nuclear material for accounting purposes under this Agreement;

(d) to establish the records and reports requirements and records evaluation procedures;

(e) to establish requirements and procedures for verification of the quantity and location of nuclear material; and

(f) to select appropriate combinations of containment and surveillance methods and techniques and the strategic points at which they are to be applied.

The results of the examination of the design information, as agreed upon between ABACC and the Agency, shall be included in the Subsidiary Arrangements.

Article 45

Re-examination of design information

Design information shall be re-examined in the light of changes in operating conditions, of developments in safeguards technology or of experience in the application of verification procedures, with a view to modifying the action taken pursuant to Article 44.

Article 46

Verification of design information

The Agency, in co-operation with ABACC and the State Party concerned, may send inspectors to facilities to verify the design information provided to the Agency pursuant to Articles 40 to 43, for the purposes stated in Article 44.

INFORMATION IN RESPECT OF NUCLEAR MATERIAL OUTSIDE FACILITIES

Article 47

The Agency shall be provided by the State Party concerned through ABACC with the following information when nuclear material is to be customarily used outside facilities, as applicable:

(a) a general description of the use of the nuclear material, its geographic location, and the user's name and address for routine business purposes; and

(b) a general description of the existing and proposed procedures for nuclear material accountancy and control.

The Agency shall be informed by ABACC, on a timely basis, of any change in the information provided to it under this Article.

Article 48

The information provided to the Agency pursuant to Article 47 may be used, to the extent relevant, for the purposes set out in Article 44(b) to (f).

RECORDS SYSTEM

General provisions

Article 49

ABACC shall arrange that records are kept in respect of each material balance area. The records to be kept shall be described in the Subsidiary Arrangements.

Article 50

ABACC shall make arrangements to facilitate the examination of records by inspectors, particularly if the records are not kept in Arabic, Chinese, English, French, Russian or Spanish.

Article 51

Records shall be retained for at least five years.

Article 52

Records shall consist, as appropriate, of:

(a) accounting records of all nuclear material subject to safeguards under this Agreement; and

(b) operating records for facilities containing such nuclear material.

Article 53

The system of measurements on which the records used for the preparation of reports are based shall either conform to the latest international standards or be equivalent in quality to such standards.

Accounting records

Article 54

The accounting records shall set forth the following in respect of each material balance area:

(a) all inventory changes, so as to permit a determination of the book inventory at any time;

(b) all measurement results that are used for determination of the physical inventory; and

(c) all adjustments and corrections that have been made in respect of inventory changes, book inventories and physical inventories.

Article 55

For all inventory changes and physical inventories the records shall show, in respect of each batch of nuclear material: material identification, batch data and source data. The records shall account for uranium, thorium and plutonium separately in each batch of nuclear material. For each inventory change, the date of the inventory change and, when appropriate, the originating material balance area and the receiving material balance area or the recipient, shall be indicated.

Article 56

Operating records

The operating records shall set forth, as appropriate, in respect of each material balance area:

(a) those operating data which are used to establish changes in the quantities and composition of nuclear material;

(b) the data obtained from the calibration of tanks and instruments and from sampling and analyses, the procedures to control the quality of measurements and the derived estimates of random and systematic error;

(c) a description of the sequence of the actions taken in preparing for, and in taking, a physical inventory, in order to ensure that it is correct and complete; and

(d) a description of the actions taken in order to ascertain the cause and magnitude of any accidental or unmeasured loss that might occur.

REPORTS SYSTEM

General provisions

Article 57

ABACC shall provide the Agency with reports as detailed in Articles 58 to 63 and 65 to 67 in respect of nuclear material subject to safeguards under this Agreement.

Article 58

Reports shall be made in English, French or Spanish, except as otherwise specified in the Subsidiary Arrangements.

Article 59

Reports shall be based on the records kept in accordance with Articles 49 to 56 and shall consist, as appropriate, of accounting reports and special reports.

Accounting reports

Article 60

The Agency shall be provided by ABACC with an initial report on all nuclear material subject to safeguards under this Agreement. The initial report shall be dispatched by ABACC to the Agency within thirty days of the last day of the calendar month in which this Agreement enters into force, and shall reflect the situation in each State Party as of the last day of that month.

Article 61

ABACC shall provide the Agency with the following accounting reports for each material balance area:

(a) inventory change reports showing all changes in the inventory of nuclear material. The reports shall be dispatched as soon as possible and, in any event, within thirty days after the end of the month in which the inventory changes occurred or were established; and

(b) material balance reports showing the material balance based on a physical inventory of nuclear material actually present in the material balance area. The reports shall be dispatched as soon as possible and, in any event, within thirty days after the physical inventory has been taken.

The reports shall be based on data available as of the date of reporting and may be corrected at a later date, as required.

Article 62

Inventory change reports shall specify identification and batch data for each batch of nuclear material, the date of the inventory change and, as appropriate, the originating material balance area and the receiving material balance area or the recipient. These reports shall be accompanied by concise notes:

(a) explaining the inventory changes, on the basis of the operating data contained in the operating records provided for under Article 56(a); and

(b) describing, as specified in the Subsidiary Arrangements, the anticipated operational programme, particularly the taking of a physical inventory.

Article 63

ABACC shall report each inventory change, adjustment and correction, either periodically in a consolidated list or individually. Inventory changes shall be reported in terms of batches. As specified in the Subsidiary Arrangements, small changes in inventory of nuclear material, such as transfers of analytical samples, may be combined in one batch and reported as one inventory change.

Article 64

The Agency shall provide ABACC with semi-annual statements of book inventory of nuclear material subject to safeguards under this Agreement, for each material balance area, as based on the inventory change reports for the period covered by each such statement.

Article 65

Material balance reports shall include the following entries, unless otherwise agreed by ABACC and the Agency:

(a) beginning physical inventory;

(b) inventory changes (first increases, then decreases);

(c) ending book inventory;

(d) shipper/receiver differences;

(e) adjusted ending book inventory;

(f) ending physical inventory; and

(g) material unaccounted for.

A statement of the physical inventory, listing all batches separately and specifying material identification and batch data for each batch, shall be attached to each material balance report.

Article 66

Special reports

ABACC shall make special reports without delay:

(a) if any unusual incident or circumstances lead ABACC to believe that there is or may have been loss of nuclear material that exceeds the limits specified for this purpose in the Subsidiary Arrangements; or

(b) if the containment has unexpectedly changed from that specified in the Subsidiary Arrangements to the extent that unauthorized removal of nuclear material has become possible.

Article 67

Amplification and clarification of reports

If the Agency so requests, ABACC shall provide it with amplifications or clarifications of any report, in so far as relevant for the purpose of safeguards under this Agreement.

INSPECTIONS

Article 68

General provisions

The Agency shall have the right to make inspections as provided for in this Agreement.

Purposes of inspections

Article 69

The Agency may make ad hoc inspections in order to:

(a) verify the information contained in the initial report on the nuclear material subject to safeguards under this Agreement;

(b) identify and verify changes in the situation which have occurred between the date of the initial report and the date of entry into force of the Subsidiary Arrangements in respect of a given facility and, in the event that Subsidiary Arrangements cease to be in force, in respect of a given facility; and

(c) identify, and if possible verify the quantity and composition of, nuclear material subject to safeguards under this Agreement in accordance with Articles 91, 94 and 96 before its transfer out of, into or between States Parties.

Article 70

The Agency may make routine inspections in order to:

(a) verify that reports are consistent with records;

(b) verify the location, identity, quantity and composition of all nuclear material subject to safeguards under this Agreement; and

(c) verify information on the possible causes of material unaccounted for, shipper/receiver differences and uncertainties in the book inventory.

Article 71

Subject to the procedures laid down in Article 75, the Agency may make special inspections:

(a) in order to verify the information contained in special reports; or

(b) if the Agency considers that information made available by ABACC, including explanations from ABACC and information obtained from routine inspections, is not adequate for the Agency to fulfill its responsibilities under this Agreement.

An inspection shall be deemed to be special when it is either additional to the routine inspection effort provided for in Articles 76 to 80 or involves access to information or locations in addition to the access specified in Article 74 for ad hoc and routine inspections, or both.

Scope of inspections

Article 72

For the purposes specified in Articles 69 to 71, the Agency may:

(a) examine the records kept pursuant to Articles 49 to 56;

(b) make independent measurements of all nuclear material subject to safeguards under this Agreement;

(c) verify the functioning and calibration of instruments and other measuring and control equipment;

(d) apply and make use of surveillance and containment measures; and

(e) use other objective methods which have been demonstrated to be technically feasible.

Article 73

Within the scope of Article 72, the Agency shall be enabled:

(a) to observe that samples at key measurement points for material balance accountancy are taken in accordance with procedures which produce representative samples, to observe the treatment and analysis of the samples and to obtain duplicates of such samples;

(b) to observe that the measurements of nuclear material at key measurement points for material balance accountancy are representative, and to observe the calibration of the instruments and equipment involved;

(c) to make arrangements with ABACC and, to the extent necessary, with the State Party concerned that, if necessary:

(i) additional measurements are made and additional samples taken for the Agency's use;

(ii) the Agency's standard analytical samples are analysed;

(iii) appropriate absolute standards are used in calibrating instruments and other equipment; and

(iv) other calibrations are carried out;

(d) to arrange to use its own equipment for independent measurement and surveillance and, if so agreed and specified in the Subsidiary Arrangements, to arrange to install such equipment;

(e) to apply its seals and other identifying and tamper-indicating devices to containments, if so agreed and specified in the Subsidiary Arrangements; and

(f) to make arrangements with ABACC or the State Party concerned for the shipping of samples taken for the Agency's use.

Access for inspections

Article 74

(a) For the purposes specified in Article 69(a) and (b) and until such time as the strategic points have been specified in the Subsidiary Arrangements, or in the event that the Subsidiary Arrangements cease to be in force, the Agency inspectors shall have access to any location where the initial report or any inspections carried out in connection with it indicate that nuclear material is present;

(b) For the purposes specified in Article 69(c) the Agency inspectors shall have access to any location of which the Agency has been notified in accordance with Articles 90(d)(iii), 93(d)(iii) or 95;

(c) For the purposes specified in Article 70, the Agency inspectors shall have access only to the strategic points specified in the Subsidiary Arrangements and to the records maintained pursuant to Articles 49 to 56; and

(d) In the event of ABACC concluding that any unusual circumstances require extended limitations on access by the Agency, ABACC and the Agency shall promptly make arrangements with a view to enabling the Agency to discharge its safeguards responsibilities in the light of these limitations. The Director General shall report each such arrangement to the Board.

Article 75

In circumstances which may lead to special inspections for the purposes specified in Article 71, the State Party concerned, ABACC and the Agency shall consult forthwith. As a result of such consultations the Agency may:

(a) make inspections in addition to the routine inspection effort provided for in Articles 76 to 80; and

(b) obtain access, in agreement with the State Party concerned and ABACC, to information or locations in addition to those specified in Article 74. Any disagreement concerning the need for additional access shall be resolved in accordance with Articles 21 and 22; in case action by ABACC, a State Party or States Parties is essential and urgent, Article 14 shall apply.

Frequency and intensity of routine inspections

Article 76

The Agency shall keep the number, intensity and duration of routine inspections, applying optimum timing, to the minimum consistent with the effective implementation of the safeguards procedures set forth in this Agreement, and shall make the optimum and most economical use of inspection resources available to it.

Article 77

The Agency may carry out one routine inspection per year in respect of facilities and material balance areas outside facilities with a content or annual throughput, whichever is greater, of nuclear material not exceeding five effective kilograms.

Article 78

The number, intensity, duration, timing and mode of routine inspections in respect of facilities with a content or annual throughput of nuclear material exceeding five effective kilograms shall be determined on the basis that, in the maximum or limiting case, the inspection regime shall be no more intensive than is necessary and sufficient to maintain continuity of knowledge of the flow and inventory of nuclear material, and the maximum routine inspection effort in respect of such facilities shall be determined as follows:

(a) for reactors and sealed storage installations, the maximum total of routine inspection per year shall be determined by allowing one sixth of a man-year of inspection for each such facility;

(b) for facilities, other than reactors or sealed storage installations, involving plutonium or uranium enriched to more than 5%, the maximum total of routine inspection per year shall be determined by allowing for each such facility 30 x $\sqrt{E}$ man-days of inspection per year, where E is the inventory or annual throughput of nuclear material, whichever is greater, expressed in effective kilograms. The maximum established for any such facility shall not, however, be less than 1.5 man-years of inspection; and

(c) for facilities not covered by paragraphs (a) or (b), the maximum total of routine inspection per year shall be determined by allowing for each such facility one third of a man-year of inspection plus 0.4 x E man-days of inspection per year, where E is the inventory or annual throughput of nuclear material, whichever is greater, expressed in effective kilograms.

The Parties to this Agreement may agree to amend the figures for the maximum inspection effort specified in this Article, upon determination by the Board that such amendment is reasonable.

A r t i c l e 79

Subject to Articles 76 to 78, the criteria to be used for determining the actual number, intensity, duration, timing and mode of routine inspections in respect of any facility shall include:

(a) the form of the nuclear material, in particular, whether the nuclear material is in bulk form or contained in a number of separate items, its chemical and isotopic composition and its accessibility;

(b) the effectiveness of ABACC's safeguards, including the extent to which the operators of facilities are functionally independent of ABACC's safeguards; the extent to which the measures specified in Article 33 have been implemented by ABACC; the promptness of reports provided to the Agency; their consistency with the Agency's independent verification; and the amount and accuracy of the material unaccounted for, as verified by the Agency;

(c) characteristics of the nuclear fuel cycles in the States Parties, in particular, the number and types of facilities containing nuclear material subject to safeguards, the characteristics of such facilities relevant to safeguards, notably the degree of containment; the extent to which the design of such facilities facilitates verification of the flow and inventory of nuclear material; and the extent to which information from different material balance areas can be correlated;

(d) international interdependence, in particular, the extent to which nuclear material is received from or sent to other States for use or processing; any verification activities by the Agency in connection therewith; and the extent to which the nuclear activities in each State Party are interrelated with those of other States; and

(e) technical developments in the field of safeguards, including the use of statistical techniques and random sampling in evaluating the flow of nuclear material.

Article 80

ABACC and the Agency shall consult if ABACC or the State Party concerned considers that the inspection effort is being deployed with undue concentration on particular facilities.

Notice of inspections

Article 81

The Agency shall give advance notice to ABACC and to the State Party concerned before arrival of Agency inspectors at facilities or material balance areas outside facilities, as follows:

(a) for ad hoc inspections pursuant to Article 69(c), at least 24 hours; for those pursuant to Article 69(a) and (b) as well as the activities provided for in Article 46, at least one week;

(b) for special inspections pursuant to Article 71, as promptly as possible after ABACC, the State Party concerned and the Agency have consulted, as provided for in Article 75, it being understood that notification of arrival normally will constitute part of the consultations; and

(c) for routine inspections pursuant to Article 70, at least 24 hours in respect of the facilities referred to in Article 78(b) and sealed storage installations containing plutonium or uranium enriched to more than 5%, and one week in all other cases.

Such notice of inspections shall include the names of the Agency inspectors and shall indicate the facilities and the material balance areas outside facilities to be visited and the periods during which they will be visited. If the Agency inspectors are to arrive from outside the States Parties, the Agency shall also give advance notice of the place and time of their arrival in the States Parties.

Article 82

Notwithstanding the provisions of Article 81, the Agency may, as a supplementary measure, carry out without advance notification a portion of the routine inspections pursuant to Article 78 in accordance with the principle of random sampling. In performing any unannounced inspections, the Agency shall fully take into account any operational programme provided pursuant to Article 62(b). Moreover, whenever practicable, and on the basis of the operational programme, it shall periodically advise ABACC and the State Party concerned, through the procedures specified in the Subsidiary Arrangements, of its general programme of announced and unannounced inspections, specifying the general periods when inspections are foreseen. In carrying out any unannounced inspections, the Agency shall make every effort to minimize any practical difficulties for ABACC and the State Party concerned and for facility operators, bearing in mind the relevant provisions of Articles 42 and 87. Similarly, ABACC and the State Party concerned shall make every effort to facilitate the task of the Agency inspectors.

Designation of Agency inspectors

Article 83

The following procedures shall apply to the designation of Agency inspectors:

(a) the Director General shall inform the States Parties, through ABACC, in writing of the name, qualifications, nationality, grade and such other particulars as may be relevant, of each Agency official he proposes for designation as an inspector for the States Parties;

(b) the States Parties, through ABACC, shall inform the Director General within thirty days of the receipt of such a proposal whether they accept the proposal;

(c) the Director General may designate each official who has been accepted by the States Parties, through ABACC, as one of the Agency inspectors for the States Parties, and shall inform the States Parties, through ABACC, of such designations; and

(d) the Director General, acting in response to a request by the States Parties, through ABACC, or on his own initiative, shall immediately inform the States Parties, through ABACC, of the withdrawal of the designation of any official as an Agency inspector for the States Parties.

However, in respect of Agency inspectors needed for the activities provided for in Article 46 and to carry out ad hoc inspections pursuant to Article 69(a) and (b), the designation procedures shall be completed, if possible, within thirty days after the entry into force of this Agreement. If such designation appears impossible within this time limit, Agency inspectors for such purposes shall be designated on a temporary basis.

Article 84

The States Parties shall grant or renew as quickly as possible appropriate visas, where required, for each Agency inspector designated pursuant to Article 83.

Conduct and visits of Agency inspectors

Article 85

Agency inspectors, in exercising their functions under Articles 46 and 69 to 73, shall carry out their activities in a manner designed to avoid hampering or delaying the construction, commissioning or operation of facilities, or affecting their safety. In particular, Agency inspectors shall not operate any facility themselves or direct the staff of a facility to carry out any operation. If Agency inspectors consider that, in pursuance of Articles 72 and 73, particular operations in a facility should be carried out by the operator, they shall make a request therefor.

Article 86

When Agency inspectors require services available in a State Party, including the use of equipment, in connection with the performance of inspections, ABACC and the State Party concerned shall facilitate the procurement of such services and the use of such equipment by Agency inspectors.

Article 87

ABACC and the State Party concerned shall have the right to have Agency inspectors accompanied during their inspections by its inspectors and representatives of that State Party, respectively, provided that Agency inspectors shall not thereby be delayed or otherwise impeded in the exercise of their functions.

STATEMENTS ON THE AGENCY'S VERIFICATION ACTIVITIES

Article 88

The Agency shall inform ABACC of:

(a) the results of its inspections, at intervals to be specified in the Subsidiary Arrangements; and

(b) the conclusions it has drawn from its verification activities in the State Party concerned, in particular by means of statements in respect of each material balance area, which shall be made as soon as possible after a physical inventory has been taken and verified by the Agency and a material balance has been struck.

TRANSFERS INTO, OUT OF AND BETWEEN THE STATES PARTIES

Article 89

General provisions

Nuclear material subject or required to be subject to safeguards under this Agreement which is transferred out of, into or between the States Parties shall, for purposes of this Agreement, be regarded as being the responsibility of ABACC and of the State Party concerned:

(a) in the case of import into the States Parties from another State, from the time that such responsibility ceases to lie with the exporting State, and no later than the time at which the material reaches its destination;

(b) in the case of export out of the States Parties to another State, up to the time at which the recipient State assumes such responsibility, and no later than the time at which the nuclear material reaches its destination; and

(c) in the case of transfer between the States Parties, from the time of transfer of responsibility, and no later than the time at which the

The point at which the transfer of responsibility will take place shall be determined in accordance with suitable arrangements to be made by ABACC and the State Party or States Parties concerned and, in the case of transfers into or out of the States Parties, the State to which or from which the nuclear material is transferred. Neither ABACC, a State Party to this Agreement nor any other State shall be deemed to have such responsibility for nuclear material merely by reason of the fact that the nuclear material is in transit on or over the territory of a State, or that it is being transported on a ship under its flag or in its aircraft.

Transfers out of the States Parties

Article 90

(a) ABACC shall notify the Agency of any intended transfer out of the States Parties of nuclear material subject to safeguards under this Agreement if the shipment exceeds one effective kilogram, or if, within a period of three months, several separate shipments are to be made to the same State, each of less than one effective kilogram but the total of which exceeds one effective kilogram.

(b) Such notification shall be given to the Agency after the conclusion of the contractual arrangements leading to the transfer and normally at least two weeks before the nuclear material is to be prepared for shipping.

(c) ABACC and the Agency may agree on different procedures for advance notification.

(d) The notification shall specify:

(i) the identification and, if possible, the expected quantity and composition of the nuclear material to be transferred, and the material balance area from which it will come;

(ii) the State for which the nuclear material is destined;

(iii) the dates on and locations at which the nuclear material is to be prepared for shipping;

(iv) the approximate dates of dispatch and arrival of the nuclear material; and

(v) at what point of the transfer the recipient State will assume responsibility for the nuclear material for the purpose of this Agreement, and the probable date on which that point will be reached.

Article 91

The notification referred to in Article 90 shall be such as to enable the Agency to make, if necessary, an ad hoc inspection to identify, and if possible verify the quantity and composition of, the nuclear material before it is transferred out of the States Parties and, if the Agency so wishes or ABACC so requests, to affix seals to the nuclear material when it has been prepared for shipping. However, the transfer of the nuclear material shall not be delayed in any way by any inspection or verification action taken or contemplated by the Agency pursuant to such notification.

Article 92

Nuclear material subject to Agency safeguards in a State Party shall not be exported unless such material will be subject to safeguards in the recipient State and until the Agency has made appropriate arrangements to apply safeguards to such material.

Transfers into the States Parties

Article 93

(a) ABACC shall notify the Agency of any expected transfer into the States Parties of nuclear material required to be subject to safeguards under this Agreement if the shipment exceeds one effective kilogram, or if, within a period of three months, several separate shipments are to be received from the same State, each of less than one effective kilogram but the total of which exceeds one effective kilogram.

(b) The Agency shall be notified as much in advance as possible of the expected arrival of the nuclear material, and in any case not later than the date on which the State Party assumes responsibility for the nuclear material.

(c) ABACC and the Agency may agree on different procedures for advance notification.

(d) The notification shall specify:

(i) the identification and, if possible, the expected quantity and composition of the nuclear material;

(ii) at what point of the transfer the State Party will assume responsibility for the nuclear material for the purpose of this Agreement, and the probable date on which that point will be reached; and

(iii) the expected date of arrival, the location where, and the date on which, the nuclear material is intended to be unpacked.

Article 94

The notification referred to in Article 93 shall be such as to enable the Agency to make, if necessary, an ad hoc inspection to identify, and if possible verify the quantity and composition of, the nuclear material at the time the consignment is unpacked. However, unpacking shall not be delayed by any action taken or contemplated by the Agency pursuant to such a notification.

Transfers between the States Parties

Article 95

The Subsidiary Arrangements shall specify the Agency's procedures for notification and verification of domestic transfers of nuclear material for transfers of nuclear material between the States Parties. While Subsidiary Arrangements are not in force, the Agency shall be notified as much in advance as possible of the transfer, but in any event, not less than two weeks before the transfer takes place.

Article 96

The notification referred to in Article 95 shall be such as to enable the Agency to make, if necessary, a routine or ad hoc inspection, as appropriate, to identify, and if possible verify the quantity and composition of, the nuclear material before it is transferred between the States Parties and, if the Agency so wishes or ABACC so requests, to affix seals to the nuclear material when it has been prepared for shipping.

Special reports

Article 97

ABACC shall make a special report as envisaged in Article 66 if any unusual incident or circumstances lead ABACC to believe that there is or may have been loss of nuclear material, including the occurrence of significant delay, during a transfer into, out of or between the States Parties.

DEFINITIONS

Article 98

For the purposes of this Agreement:

1. ABACC means the legal person created by the SCCC Agreement.

2. A. adjustment means an entry into an accounting record or a report showing a shipper/receiver difference or material unaccounted for.

B. annual throughput means, for the purposes of Articles 77 and 78, the amount of nuclear material transferred annually out of a facility working at nominal capacity.

C. batch means a portion of nuclear material handled as a unit for accounting purposes at a key measurement point and for which the composition and quantity are defined by a single set of specifications or measurements. The nuclear material may be in bulk form or contained in a number of separate items.

D. batch data means the total weight of each element of nuclear material and, in the case of plutonium and uranium, the isotopic composition when appropriate. The units of account shall be as follows:

(a) grams of contained plutonium;

(b) grams of total uranium and grams of contained uranium-235 plus uranium-233 for uranium enriched in these isotopes; and

(c) kilograms of contained thorium, natural uranium or depleted uranium.

For reporting purposes the weights of individual items in the batch shall be added together before rounding to the nearest unit.

E. book inventory of a material balance area means the algebraic sum of the most recent physical inventory of that material balance area and of all inventory changes that have occurred since that physical inventory was taken.

F. correction means an entry into an accounting record or a report to rectify an identified mistake or to reflect an improved measurement of a quantity previously entered into the record or report. Each correction must identify the entry to which it pertains.

G. effective kilogram means a special unit used in safeguarding nuclear material. The quantity in effective kilograms is obtained by taking:

(a) for plutonium, its weight in kilograms;

(b) for uranium with an enrichment of 0.01 (1%) and above, its weight in kilograms multiplied by the square of its enrichment;

(c) for uranium with an enrichment below 0.01 (1%) and above 0.005 (0.5%), its weight in kilograms multiplied by 0.0001; and

(d) for depleted uranium with an enrichment of 0.005 (0.5%) or below, and for thorium, its weight in kilograms multiplied by 0.00005.

H. enrichment means the ratio of the combined weight of the isotopes uranium-233 and uranium-235 to that of the total uranium in question.

I. facility means:

(a) a reactor, a critical facility, a conversion plant, a fabrication plant, a reprocessing plant, an isotope separation plant or a separate storage installation; or

(b) any location where nuclear material in amounts greater than one effective kilogram is customarily used.

J. inventory change means an increase or decrease, in terms of batches, of nuclear material in a material balance area; such a change shall involve one of the following:

(a) increases:

(i) import;

(ii) domestic receipt: receipts from other material balance areas, receipts from an activity referred to in Article 13, or receipts at the starting point of safeguards;

(iii) nuclear production: production of special fissionable material in a reactor; and

(iv) de-exemption: re-application of safeguards on nuclear material previously exempted therefrom on account of its use or quantity.

(b) decreases:

(i) export;

(ii) domestic shipment: shipments to other material balance areas or shipments for an activity referred to in Article 13;

(iii) nuclear loss: loss of nuclear material due to its transformation into other element(s) or isotope(s) as a result of nuclear reactions;

(iv) measured discard: nuclear material which has been measured, or estimated on the basis of measurements, and disposed of in such a way that it is not suitable for further nuclear use;

(v) retained waste: nuclear material generated from processing or from an operational accident, which is deemed to be unrecoverable for the time being but which is stored;

(vi) exemption: exemption of nuclear material from safeguards on account of its use or quantity; and

(vii) other loss: for example, accidental loss (that is, irretrievable and inadvertent loss of nuclear material as the result of an operational accident) or theft.

K. key measurement point means a location where nuclear material appears in such a form that it may be measured to determine material flow or inventory. Key measurement points thus include, but are not limited to, the inputs and outputs (including measured discards) and storages in material balance areas.

L. man-year of inspection means, for the purposes of Article 78, 300 man-days of inspection, a man-day being a day during which a single inspector has access to a facility at any time for a total of not more than eight hours.

M. material balance area means an area in or outside of a facility such that:

(a) the quantity of nuclear material in each transfer into or out of each material balance area can be determined; and

(b) the physical inventory of nuclear material in each material balance area can be determined when necessary, in accordance with specified procedures;

in order that the material balance for Agency safeguards purposes can be established.

N. material unaccounted for means the difference between book inventory and physical inventory.

O. nuclear material means any source or any special fissionable material as defined in Article XX of the Statute. The term source material shall not be interpreted as applying to ore or ore residue. Any determination by the Board under Article XX of the Statute after the entry into force of this Agreement which adds to the materials considered to be source material or special fissionable material shall have effect under this Agreement only upon acceptance by ABACC and the States Parties.

P. physical inventory means the sum of all the measured or derived estimates of batch quantities of nuclear material on hand at a given time within a material balance area, obtained in accordance with specified procedures.

Q. shipper/receiver difference means the difference between the quantity of nuclear material in a batch as stated by the shipping material balance area and as measured at the receiving material balance area.

R. significant quantity means the significant quantity of nuclear material as set by the Agency.

S. source data means those data, recorded during measurement or calibration or used to derive empirical relationships, which identify nuclear material and provide batch data. Source data may include, for example, weight of compounds, conversion factors to determine weight of element, specific gravity, element concentration, isotopic ratios, relationship between volume and manometer readings and relationship between plutonium produced and power generated.

T. strategic point means a location selected during examination of design information where, under normal conditions and when combined with the information from all strategic points taken together, the information necessary and sufficient for the implementation of safeguards measures is obtained and verified; a strategic point may include any location where key measurements related to material balance accountancy are made and where containment and surveillance measures are executed.

DONE at Vienna, on the thirteenth day of December 1991, in quadruplicate, in the English language.

For the REPUBLIC OF ARGENTINA:

For the INTERNATIONAL ATOMIC ENERGY AGENCY:

For the FEDERATIVE REPUBLIC OF BRAZIL:

For ABACC:

PROTOCOL

Article 1

This Protocol amplifies certain provisions of the Agreement and, in particular, specifies the arrangements for co-operation in the application of the safeguards provided for under the Agreement. In implementing these arrangements, the Parties to the Agreement shall be guided by the following principles:

(a) the need for ABACC and the Agency each to reach its own independent conclusions;

(b) the need to co-ordinate to the extent possible the activities of ABACC and the Agency for the optimum implementation of this Agreement, and in particular to avoid unnecessary duplication of ABACC's safeguards;

(c) when performing their activities, ABACC and the Agency shall work jointly, wherever feasible, in accordance with compatible safeguards criteria of the two organizations; and

(d) the need to enable the Agency to fulfill its obligations under this Agreement taking into account the requirement for the Agency to preserve technological secrets.

Article 2

In the implementation of the Agreement, the Agency shall accord to the States Parties and to ABACC treatment not less favourable than the treatment it accords to States and regional systems of verification with a level of functional independence and technical effectiveness comparable to that of ABACC.

Article 3

ABACC shall collect the information on facilities and on nuclear material outside facilities to be provided to the Agency under the Agreement on the basis of the Agency's design information questionnaire annexed to the Subsidiary Arrangements.

Article 4

ABACC and the Agency shall each carry out the examination of design information provided for in Article 44(a) to (f) of the Agreement and shall include the results thereof in the Subsidiary Arrangements. The verification of design information provided for in Article 46 of the Agreement shall be carried out by the Agency in co-operation with ABACC.

Article 5

In addition to the information referred to in Article 3 of this Protocol, ABACC shall also transmit information on the inspection methods which it proposes to use, including estimates of its inspection efforts for the routine inspection activities for facilities and material balance areas outside facilities.

Article 6

The preparation of the Subsidiary Arrangements shall be the joint responsibility of ABACC, the Agency and the State Party concerned.

Article 7

ABACC shall collect reports from the States Parties based on records kept by the operators, keep centralized accounts on the basis of these reports and proceed with the technical and accounting control and analysis of the information received.

Article 8

Upon completion of the tasks referred to in Article 7 of this Protocol ABACC shall, on a monthly basis, produce and provide the Agency with the inventory change reports within the time limits specified in the Subsidiary Arrangements.

Article 9

Further, ABACC shall transmit to the Agency the material balance reports and physical inventory listings with the frequency and form specified in the Subsidiary Arrangements.

Article 10

The form and format of reports referred to in Articles 8 and 9 of this Protocol, as agreed between ABACC and the Agency, shall be specified in the Subsidiary Arrangements and shall be compatible with those used in the general practice of the Agency.

Article 11

The routine inspection activities of ABACC and of the Agency, including, to the extent feasible, the inspections referred to in Article 82 of the Agreement, shall be co-ordinated pursuant to the provisions of Articles 12 to 19 of this Protocol and to the Subsidiary Arrangements.

Article 12

Subject to Articles 77 and 78 of the Agreement, account shall also be taken of the inspection activities carried out by ABACC in determining the actual number, intensity, duration, timing and mode of the Agency inspections in respect of each facility.

Article 13

Inspection effort under the Agreement for each facility shall be determined by the use of the criteria set forth in Article 79 of the Agreement. Such inspection effort, expressed as agreed estimates of the actual inspection effort to be applied, shall be set out in the Subsidiary Arrangements, together with the descriptions of verification approaches and the scope of inspections to be carried out by ABACC and by the Agency. These estimates shall constitute, under normal operating conditions and under the conditions set out below, the actual inspection effort at each facility under the Agreement:

(a) the continued validity of the information on the SCCC provided for in Article 35 of the Agreement, as specified in the Subsidiary Arrangements;

(b) the continued validity of the information provided to the Agency in accordance with Article 3 of this Protocol;

(c) the continued provision by ABACC of the reports pursuant to Articles 62 and 63, 65 to 67 and 69 to 71 of the Agreement, as specified in the Subsidiary Arrangements;

(d) the continued application of the co-ordination arrangements for inspections pursuant to Articles 11 to 19 of this Protocol, as specified in the Subsidiary Arrangements; and

(e) the application by ABACC of its inspection effort with respect to the facility, as specified in the Subsidiary Arrangements, pursuant to this Article.

Article 14

The general scheduling and planning of the inspections under the Agreement, including arrangements for the presence of ABACC and Agency inspectors during the performance of inspections under this Agreement, shall be established in co-operation between ABACC and the Agency, taking into account the scheduling of the Agency's other safeguards activities in the region.

Article 15

The technical procedures in general for each type of facility and for individual facilities shall be compatible with those of the Agency and shall be specified in the Subsidiary Arrangements, in particular with respect to:

(a) the determination of techniques for random selection of statistical samples;

(b) the checking and identification of standards;

(c) containment and surveillance measures; and

(d) verification measures.

ABACC and the Agency shall consult and identify in advance the containment and surveillance measures and the verification measures to be applied in each individual facility until the time the Subsidiary Arrangements enter into force. Such measures shall similarly be compatible with those of the Agency.

Article 16

ABACC shall transmit to the Agency its inspection reports for all ABACC inspections performed under the Agreement.

Article 17

The samples of nuclear material for ABACC and the Agency shall be drawn from the same randomly selected items and shall be taken together, except when ABACC does not require samples.

Article 18

The frequency of physical inventories to be taken by facility operators and to be verified for safeguards purposes shall be in accordance with the requirements of the relevant Facility Attachment.

Article 19

(a) With a view to facilitating the application of the Agreement and of this Protocol, a Liaison Committee shall be established, composed of representatives of ABACC, of the States Parties and of the Agency.

(b) The Committee shall meet at least once a year:

(i) to review, in particular, the performance of the co-ordination arrangements provided for in this Protocol, including agreed estimates of inspection efforts;

(ii) to examine the development of safeguards methods and techniques; and

(iii) to consider any questions which have been referred to it by the Sub-Committee referred to in paragraph (c).

(c) The Committee may appoint a Sub-Committee to meet periodically to discuss outstanding safeguards implementation issues arising from the application of safeguards under this Agreement. Any questions which cannot be settled by the Sub-Committee will be referred to the Liaison Committee.

(d) Without prejudice to urgent actions which might be required under the Agreement, should problems arise in the application of Article 13 of this Protocol, in particular when the Agency considers that the conditions specified therein have not been met, the Committee or the Sub-Committee shall meet as soon as possible in order to assess the situation and to discuss the measures to be taken. If a problem cannot be settled, the Committee may make appropriate proposals to the Parties, in particular with the view to modifying the estimates of inspection efforts for routine inspection activities.

DONE at Vienna, on the thirteenth day of December 1991, in quadruplicate, in the English language.

For the REPUBLIC OF ARGENTINA:

For the INTERNATIONAL ATOMIC ENERGY AGENCY:

For the FEDERATIVE REPUBLIC OF BRAZIL:

For ABACC: